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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,025	08/01/2006	Reinhold Maurus	2003P17896WOUS	1325
22116 7590 09/15/2009 SIEMENS CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 170 WOOD AVENUE SOUTH ISELIN, NJ 08830				
EXAMINER MILLER, ROSE MARY				
ART UNIT 2856		PAPER NUMBER		
MAIL DATE 09/15/2009		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/588,025

**Applicant(s)**

MAURUS ET AL.

**Examiner**

ROSE M. MILLER

**Art Unit**

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2006 and 22 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-30 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Paper No(s)/Mail Date \_\_\_\_\_
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because empty diagram boxes are impermissible under 37 CFR §1.83(a) which recites as follows:

*"The drawing in a nonprovisional application must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a **labeled representation** (e.g., a **labeled rectangular box**)."* (Emphasis added by Examiner)

The empty diagram boxes 36, 46, and 48 found in Figures 2 and 3 of the drawings, must be labeled with an appropriate descriptive phrase in addition to the reference characters all ready present. Please see 37 CFR §1.84(n), 37 CFR §1.84(o), and 37 CFR §1.83(p) for more information on the difference between the required legends and the reference characters all ready present. Appropriate correction is required.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37

CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the light quanta emitting substance being applied in a strip form to the blade disc, to the covering strip structure, and to at least one turbine blade (as found in claims 20 and 27) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Presently the drawings show the light quanta emitting substance being applied to one the following: the blade disc, the covering strip structure, and at least one turbine blade. The drawings do not show the light quanta emitting substance being applied to more than one of these at the same time. Therefore, the subject matter of claims 20 and 27 is not shown in the drawings as the claims recite the strip being applied to all of the recited elements and not to just one of the elements.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The abstract of the disclosure is objected to because legal phraseology such as the phrases "said" and "means" are not allowed in the abstract. Correction is required. See MPEP § 608.01(b).
5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the light quanta emitting material being applied to the blade disc, the covering strip, and to at least one turbine blade in the form of a strip. The originally filed specification only teaches the light quanta emitting substance being applied to one the following: the blade disc, the covering strip structure, and at least one turbine blade. The specification does not teach the light quanta emitting substance being applied to more than one of these at the same time (other than multiple turbine blades). Therefore, the subject matter of claims 20 and 27 is not taught in the specification as the claims recite the strip being applied to all of the recited elements and not to just one of the elements.

***Claim Objections***

6. Claim 24 is objected to because of the following informalities: the phrase "light quant" on line 3 of the claim should read --light quanta--. Appropriate correction is required.

***Allowable Subject Matter***

7. Claims 15-30 are allowed.
8. The following is an examiner's statement of reasons for allowance: The prior art of record fails to teach and/or suggest a method for determining oscillations of a rotating blade disc of a turbomachine, comprising: arranging a substance that emits a light quanta when excited by an external excitation source at a location on the blade disc; exciting the light emitting substance by the external excitation source to emit the light quanta; sensing the emitted light quanta by a light sensor; and evaluating a signal from the sensor to determine the oscillation behavior of the blade disc.  
The prior art of record also fails to teach and/or suggest an apparatus for determining rotating turbine blade disc oscillations, comprising: a light quanta emitting substance arranged

on the blade disc which emits light quanta when excited by an external radiation source; a sensor that senses light quanta emitted from the externally excited substance and outputs a signal; and an evaluation circuit that evaluates the signal from the sensor and determines the oscillation behavior of the blade disc.

The closest prior art is that of **Twerdochlib (US 2006/0000283 A1)** and **Beeson et al. (US 5,761,956)**. **Twerdochlib** teaches using optically reflective targets in conjunction with a laser and an optical receiver to determine the oscillations of blades in a blade disc while **Beeson et al.** teaches a passive vibration monitor which includes an optical lens for receiving infrared radiation generated by the blade of the turbine. The prior art fails to teach and/or suggest the utilization of a light quanta emitting substance which is activated by an external excitation source as the active means for monitoring the vibrations of a blade disc.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Clement et al. (US 5,511,426)** discloses a process and device for measuring operating turbine blade vibrations.

**Woditschka (US 2003/0118442 A1)** discloses a steam turbine and method of measuring the vibration of a moving blade in a flow passage of a steam turbine.

**Twerdochlib (US 2006/0000283 A1)** discloses a system for monitoring turbine blade vibration.

**Twerdochlib (US 7,341,428 B2)** discloses a system for monitoring torsional blade vibration of a turbine.

10. This application is in condition for allowance except for the following formal matters:

Objection to the Drawings as listed above, objections to the Abstract and Specification as listed above, and the typographical error found in claim 24.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROSE M. MILLER whose telephone number is (571)272-2199. The examiner can normally be reached on Monday - Friday, 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hezron Williams/  
Supervisory Patent Examiner, Art Unit  
2856

/R. M. M./  
Examiner, Art Unit 2856  
13 September 2009